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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/604,980

08/29/2003

Han-Chung Lai

9436-US-PA

1979

31561

7590

05/24/2004

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE

7 FLOOR-1, NO. 100

ROOSEVELT ROAD, SECTION 2

TAIPEI, 100

TAIWAN

EXAMINER

ROCCHEGIANI, RENZO

ART UNIT

PAPER NUMBER

2825

DATE MAILED: 05/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/604,980	Applicant(s) LAI, HAN-CHUNG	
	Examiner Renzo N. Rocchegiani	Art Unit 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 17-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Taiwan on March 10, 2002. It is noted, however, that applicant has not filed a certified copy of the Taiwanese application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,683,668 B2 (Moon et al.) in view of U.S. Patent Application Publication No. 2001/0028071 A1 (Yoo et al.).

Moon et al. disclose a process to form a pixel structure comprising the steps of forming a gate (item 56) and a scan line (item 52) having a connection with the gate (Fig. 2) over a substrate (item 51). Forming an insulation film (item 62) over the gate and the scan line. Forming a channel layer over the insulation layer above the gate (item 64). Forming an ohmic contact over the channel layer (item 66). Forming source/drain terminals (items 58 and 60) over the channel layer and a data line (item 54) having connection with one of the source/drain terminals over the insulation layer wherein the gate, channel layer and source/drain terminals form a TFT. (Fig. 6, and col. 4, lines 18-25). The data line extends to the edge of the substrate and connects with a

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patterned metallic pad. (Fig. 2, items 4 and 2). Forming a passivation layer (item 68) over the substrate covering the TFT. Patterning the passivation layer and forming a pixel electrode (item 72) to connect to the source/drain terminal. (Fig. 6).

Moon et al. do not disclose patterning the passivation layer to expose the sidewalls of the source/drain terminals to contact the pixel electrode and do not disclose patterning using a photoresist and performing back side exposure.

Yoo et al. Teach the formation of a pixel structure wherein a TFT is formed with a passivation layer (item 112a) thereon wherein the passivation layer is patterned to expose the sidewalls of the source/drain terminals to contact the pixel electrode wherein the patterning is performed using a photoresist and back side exposure wherein the TFT acts as a mask. (Fig. 7 and [0055]) Yoo et al. further teaches that even with the sidewall exposed, a hole is formed in the passivation layer to allow contact between the pixel electrode and the source/drain terminal. (item 110).

It would have been obvious to one with ordinary skill in the art to combine the teachings of Yoo et al. to those of Moon et al., since Yoo et al. teaches this to be a conventional process in the formation of pixel structure TFTs. (Fig. 3A-3D).

4. Claims 8-13, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,683,668 B2 (Moon et al.) in view of U.S. Patent Application Publication No. 2001/0028071 A1 (Yoo et al.) and in further view of U.S. Patent No. 5,156,986 (Wei et al.).

As stated in paragraph 3, all the limitations of the claims have been met except

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for teaching that an etch stop layer is formed over the channel region and that the source/drain terminals, the channel region, the data line are all etched using one photoresist mask layer that is thinner over the gate and wherein three etch steps are used.

Wei et al. teach the formation of a TFT pixel structure wherein one photoresist (item 40) that is thinner over the gate (Fig. 11) is used to pattern the source/drain terminals, the channel region, the data line, and wherein an etch stop layer is formed over the channel region. (item 32)

It would have been obvious to one with ordinary skill in the art to combine the teachings of Wei et al. to those of Moon and Yoo, since Wei et al. teaches an effective method of patterning the structure that Moon is forming. Furthermore while Wei et al. do not teach performing three separate etch steps, to do so would be obvious to one of ordinary skill in the art since it has been held that the transposition of process steps or the splitting of one step into two (or more), where the processes are substantially identical or equivalent in terms of function, manner and result, does not patentably distinguish the process. *Ex parte Rubin* 128 USPQ 159.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,683,668 B2 (Moon et al.) in view of U.S. Patent Application Publication No. 2001/0028071 A1 (Yoo et al.) and in further view of U.S. Patent No. 5,156,986 (Wei et al.) and of US Patent No. 6,022,753 (Park et al.).

As stated in paragraph 4, all the limitations of this claim have been met except for

teaching that the scan line extends to the edge of the substrate and connect with patterned metallic pad to connect the pixel electrode.

Park et al. teach that in an LCD device the scan line would connect the pixel electrode to a contact pad. (Fig. 1).

It would have been obvious to one with ordinary skill in the art to combine the teachings of Park et al. to those of Moon, Yoo and Wei, since in the fabrication of a LCD connection to the contact pads must be made in order for the device to function.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,683,668 B2 (Moon et al.) in view of U.S. Patent Application Publication No. 2001/0028071 A1 (Yoo et al.) and in further view of US Patent No. 6,022,753 (Park et al.).

As stated in paragraph 4, all the limitations of this claim have been met except for teaching that the scan line extends to the edge of the substrate and connect with patterned metallic pad to connect the pixel electrode.

Park et al. teach that in an LCD device the scan line would connect the pixel electrode to a contact pad. (Fig. 1).

It would have been obvious to one with ordinary skill in the art to combine the teachings of Park et al. to those of Moon and Yoo, since in the fabrication of a LCD connection to the contact pads must be made in order for the device to function.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renzo N. Rocchegiani whose telephone number is (571)272-1904. The examiner can normally be reached on Mon.-Fri. 8:00 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571)272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Renzo N. Rocchegiani
Examiner
Art Unit 2825



MATTHEW SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800